

# Work Order ID 53537

November 09, 2009 8:47:14 AM



Page 1

Item ID: D209-669-043  
Revision ID: B  
Item Name: Replacement Skidtube

Accept



Setup Start



Stop



Start Date: 11/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 11/20/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: UMF Date: 09-11-09 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D2906	Rev B

100	DOCUMENT CONTROL	0.00							
DC	Memo	0.00							
Document Control	Photocopy D209-669 bluefile & type labels per PPP D205-669-043 Chg 002								

N/A *[Signature]*

110	Skidtubes	0.00							
Skidtubes	Memo	0.00							
Skidtubes	1- Inspect mat'l D2500-1-190 for damage								
	2-Cut D2500-1-190 per Dwg D2906 if necessary Debur ends								
	3-Acid etch and Alodine tube per QSI 005 4.1								

1 11/11/16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Start Date: 11/10/2009 Start Qty: 1.00



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Reference:

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DP 9-11-17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

130

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Drill pilot holes using drill jig DT8149, DT8711-2 & DT8711-3 (Do not use cutting fluid)

M 9/11/17

2-Open holes to 0.500" as per Dwg D2906 without cutting fluid

3-Countersink holes as per Dwg D2906 without cutting fluid

4-Deburr and blow out all chips from inside of tube

5-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting  
Pick:

Qty ☐ Part Number ☐ Description ☐ Batch  
A/R ☐ ☐ Sikaflex-291 ☐ 612395 ☐

Sikaflex expire date: 012130

Start Time: 1:00 Date: 9/11/17

Fin Time: 8:30 Date: 9/11/18

pick:

Qty	P/N	description
1	D2926-3	Web

B/N  
653524

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

\_\_\_\_\_

Page 4

**Accept**

**Setup Start**

**Stop**

(S) [REDACTED]

**Cust Item ID:**

**Author's address:** Department of Psychology,  
University of California, San Diego,  
La Jolla, CA 92037, USA.  
*E-mail:* jacob@ucsd.edu

**Customer:**

**Reference:**

Run Start

**Stop**

### Operation Description

### Set Up/ Run Hours

**Draw  
Number**

**Draw  
Rev.**

**Plan  
Code**

**Accept  
Qty**

Reject  
QtyReject  
Number

**Insp.**  
**Stamp**

0.00



## BENDING MACHINE - CROSSTUBES

CNC Bend 1

## Memo

0.00

CNC Delta 100 Bender

1-Bend as per program COB43FWD & COBRAFT on CNC Bender and Folio FT

2-Cut tubes as per Dwg. D2906 & per template DT8185B & DT8185BC

0.00

\_\_\_\_\_

## Skidtubes

## Skidtubes

## Memo

0.00

## Skidtubes

1-Cut tube as per dwg and ensure ends are perpendicular to ridge

2-Deburr ends

3-Prepare tube for welding, remove alodine as required.

0.00

\_\_\_\_\_

QC5- Inspect part completeness to step on W/O

QC

## Memo

0.00

## Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Required Date: 11/20/2009 Req'd Qty: 1.00



Cust Item ID:  
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Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170  Skidtubes	Large Fab	0.00							
Skidtubes	<p><b>Memo</b></p> <p>1-Weld crossbolt spacers D2579 as per Dwg. D2906 and QSI 004. For D2579 spacers, weld one side, pass 3/8" drill, weld other side, pass 3/8" drill A/R <input type="checkbox"/> <input type="checkbox"/> Aluminum Rod <i>M112507</i></p> <p>2-Grind welds as per Dwg D2906 Grind flush ridge made from bending <i>BE 09/11/13</i></p> <p>3-Drill holes for wearplates using DT8217 Open holes to 19/64", adjust stopper not to hit web. Deburr <i>9/11/19</i></p> <p>4-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2906, Deburr holes</p> <p>5-Drill pilot holes for aft &amp; fwd cap using DT8215 open holes to #6" Deburr</p> <p>6-Drill pilot holes for Tow ring using DT8091-3 , open to .640" and Deburr</p>	0.00							
180  QC	QC10- Inspect visual per QSI004- ground welds	0.00							
Quality Control	<p><b>Memo</b></p> <p><i>2) Skidtube</i></p>	0.00							<i>9-11-19</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Stop



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Cust Item ID:

Required Date: 11/20/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

⇒ Sorulza



/

200

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

M 09/11/24



/

210

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

11/12/14

⇒ M 09/11/24



/

START TIME: 10:30AM  
OVEN TEMPERATURE: 320°F  
FINISH TIME: 11:00AM

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Cust Item ID:  
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Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

220

QC3- Inspect Part Finish

0.00

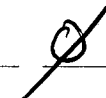


QC

Memo

0.00

= 7m, 1 09/11/24



Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Stop



Start Date: 11/10/2009 Start Qty: 1.00  
Required Date: 11/20/2009 Req'd Qty: 1.00



Cust Item ID:  
Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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230

0.00



HandFinish

HandFinishing

Memo

0.00



1-Install inserts & wearplates as per Dwg. D2906. Use a drop of Sikaflex on insert holes before installing wearplates

A/R ☐ ☐ ☐ Sikaflex-291 ☐ \_\_\_\_\_ M112391

Sikaflex expire date: 10/20

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2906

3-Inspect for foreign object per QSI 024

4-Install D2855 Fwd & Aft Cap as per Dwg D2906 and seal Fwd & Aft Cap with Sikaflex. Clean excess adhesive

A/R ☐ ☐ ☐ Sikaflex-291 ☐ \_\_\_\_\_ M112391

Sikaflex expire date: 10/20

5-Wing Walk as per Dwg D2906 and QSI 005 4.4

Batch: M112623

m.l 09/11/24  
m.l 09/11/25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Setup Start



Stop



Start Date: 11/10/2009 Start Qty: 1.00  
Required Date: 11/20/2009 Req'd Qty: 1.00



Cust Item ID:  
Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024	0.00  0.00							
250  Packaging Packaging Packaging	Packaging  Memo Identify and pack for shipping as per PPPD209-669-043 Location: _____ PPP Rev: <u>PPD 53582</u>	0.00  0.00							<u>09/11/25</u>
260  QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00							<u>09/11/26</u> <u>09-11-25</u>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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# Picklist Print

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Page 1

Work Order ID: 53537

Parent Item: D209-669-043RevB

Parent Item Name: Replacement Skidtube

Comments:

Start Date: 11/10/2009

Required Date: 11/20/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
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D2500-1-190RevU/R

Manufactured

No

110

Each

0.0000

1.0000



B 50166

1 11/11/16

Ext'n - 'I' Beam Tube 4"

D2926-3RevA

Manufactured

No

110

Each

1.0000

1.0000



B 53524

1 11/11/17

Web

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

1

52066

1

D2579RevE

Manufactured

No

170

Each

615.0000

19.0000



Crossbolt Spacer

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

493

51525

493

Main Warehouse

ST

122

43988

4

46434

4

46956

2

47797

9

48272

2

51314

71

51315

30

19 BE 09/11/18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Page 2

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Parent Item: D209-669-043RevB



Parent Item Name: Replacement Skidtube


Start Date: 11/10/2009

Required Date: 11/20/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2855RevA  Cap		Manufactured	No			230	Each	105.0000	2.0000			

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FP6

105

50513

1

50770

4

51539

100

AN3-5A

Purchased

No

230

Each

2,221.000

4.0000



Bolt

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

2221

100188

188

105057

2033

M-h 09/11/24

2X

M-h 09/11/24

4X

November 09, 2009 8:47:13 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Parent Item Name: Replacement Skidtube



Comments:

Start Date: 11/10/2009

Required Date: 11/20/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960JD10L 		Purchased	No			230	Each	5,719.000	4.0000			
Washer												

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	5719
101291	16
104885	153
105793	236
109632	410
110985	4904

M. h 09/11/24

4X

ALS7-1032-130

Purchased

No

230

Each

1,880.000 44.0000



Insert

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	1880
105855	16
108606	52
111529	1488
111779	313
112772	11

M. h 09/11/24

44X

M 110511

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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NOTE: Date & initial all entries



# Picklist Print

November 09, 2009 8:47:13 AM

Page 4

Work Order ID: 53537

Parent Item: D209-669-043RevB

Parent Item Name: Replacement Skidtube



Comments:

Start Date: 11/10/2009

Required Date: 11/20/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN3C4A 		Purchased	No			230	Each	944.0000	44.0000			
BOLT												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST <u>M113121</u>	944	
112314	13	
112720	12	
112724	3	
112794	316	
112829	500	
112991	100	

M-L 09/11/24  
44X

AN960C10L



washer

Purchased

No

230

Each

3,906.000 44.0000



Warehouse	Loc Qty	Loc Code
Location		
OFFSHORE		
FG	100	
103585	100	
Main Warehouse		
ST	3806	
112116	628	
<u>112612</u>	2178	
112933	1000	

M-L 09/11/24  
44X

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

November 09, 2009 8:47:13 AM

Page 5

Work Order ID: 53537

Parent Item: D209-669-043RevB

Parent Item Name: Replacement Skidtube


Comments:

Start Date: 11/10/2009

Required Date: 11/20/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2594-3RevC  O-Ring, 205 Skidtube		Manufactured	No			230	Each	994.0000	14.0000			

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

FP    27

51613    27

Main Warehouse

ST    967

52562    967

D2594-1RevC

Manufactured      No

230

Each

585.0000

14.0000



Plug, 205 Skidtube

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST    585

42221    16

42807    92

43884    3

46435    2

51527    9

51757    463

M-L 09/11/24

14X

M-L 09/11/24

14X

November 09, 2009 8:47:13 AM

Shop Packet Print

Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

• **NOTE:** Date & initial all entries

# Picklist Print

November 09, 2009 8:47:13 AM

Work Order ID: 53537



Parent Item: D209-669-043RevB



Parent Item Name: Replacement Skidtube



Start Date: 11/10/2009

Required Date: 11/20/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3564-9RevD  Wearshoe		Manufactured	No			230	Each	31.0000	1.0000 			

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FP19	29	
51675	7	
52593	22	
Main Warehouse		
ST	2	
44659	1	
45825	1	

M-d 09/11/24

IX

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

• **NOTE:** Date & initial all entries

# Picklist Print

Page 7

November 09, 2009 8:47:13 AM

Work Order ID: 53537

Parent Item: D209-669-043RevB

Parent Item Name: Replacement Skidtube

Comments:

Start Date: 11/10/2009

Required Date: 11/20/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3564-11RevD		Manufactured	No			230	Each	43.0000	1.0000			

Wearshoe

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FP	10	
51905	10	
Main Warehouse		
FP19	31	
51594	8	
52125	23	
Main Warehouse		
ST	2	
45823	1	
50112	1	

m-k 09/11/24

IX

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

• **NOTE:** Date & initial all entries



# Picklist Print

November 09, 2009 8:47:13 AM

Work Order ID: 53537



Parent Item: D209-669-043RevB



Parent Item Name: Replacement Skidtube



Start Date: 11/10/2009

Required Date: 11/20/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3564-5RevD  Wearshoe		Manufactured	No			230	Each	34.0000	1.0000 			

<u>Warehouse</u> <u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
OFFSHORE		
FG	2	
34806	2	
Main Warehouse		
FP19	16	
51655	8	
51925	8	
Main Warehouse		
ST	16	
45824	1	
47433	1	
52595	14	

*m-l 09/11/24*

*1x*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

November 09, 2009 8:47:13 AM

Work Order ID: 53537

Parent Item: D209-669-043RevB

Parent Item Name: Replacement Skidtube



Comments:

Start Date: 11/10/2009

Required Date: 11/20/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3566-1RevC  Gasket		Manufactured	No			230	Each	20.0000	2.0000 			

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP 15

52512 15

Main Warehouse

ST 5

46349 1

51218 1

51259 3

B 53455

*m-h 04/11/24*

*2x*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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# Picklist Print

November 09, 2009 8:47:13 AM

Work Order ID: 53537



Parent Item: D209-669-043RevB



Parent Item Name: Replacement Skidtube



Start Date: 11/10/2009

Required Date: 11/20/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3566-5RevC  Gasket		Manufactured	No			230	Each	34.0000	1.0000 			

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FP	10	
51929	10	
Main Warehouse		
FP19	20	
52909	20	
Main Warehouse		
ST	4	
36113	1	
46186	1	
47318	1	
51260	1	

m. h. 09/11/24

IX

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



QTY -041	QTY -043	Part Number	Description
X		D2906-041	SKIDTUBE ASSEMBLY
	X	D2906-043	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
22	19	D2579	CROSS BOLT SPACER
12	14	D2594-1	PLUG
12	14	D2594-3	O-RING
2	2	D2855	AFT CAP
1		D2926-1	WEB
	1	D2926-3	WEB
1	1	D3564-9	WEARSHOE (REPLACES D2577-1)
1	1	D3564-11	WEARSHOE (REPLACES D2577-3)
1	1	D3564-5	WEARSHOE (REPLACES D2577-5)
1		D3564-15	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1		D3566-15	GASKET
50	44	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or ALS4-1032-130	INSERT
50	44	AN3C4A	BOLT
4	4	AN3-5A	BOLT
50	44	AN960C10L	WASHER
4	4	AN960JD10L	WASHER

#### GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) LENGTH OF D2500-1 EXTRUSION BEFORE BENDING = 190 INCHES.
- 3) INSERT D2926-1/-3 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 6) USE DART DRILL TEMPLATE DT2906-041T1 (D2906-041) OR DT2906-043T1 (D2906-043) TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION C-C AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/291.
- 7) WELDING TO BE DONE PER DART QSI 004.
- 8) FINISH:  
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2926-1/-3 WEB. POWDER COAT ASSEMBLY WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 9) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (12 PLACES).
- 10) ALL DIMENSIONS ARE IN INCHES.

#53537

**RELEASED**

07.09.04

B	UPDATE DRAWING FORMAT; RE-ORGANIZE; ADD STAINLESS STEEL WEARPLATES AND GASKETS CHANGE WEARPLATE HARDWARE TO SS; PG 1: ADD NOTE 10; PG 2 C7: REMOVE AFT Ø0.640 HOLE FROM -041; PG 3 C3: CORRECTED -043 CAP P/N; PG 3 D7: 38 PLACES WAS 44 PLACES;	CB	07.08.21
A	NEW ISSUE	CP	04.06.22
REV.	DESCRIPTION	BY	DATE
DESIGN	9P	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	CB		
CHECKED	PH	DRAWING NO.	REV. B
MFG. APPR.	21	D2906	SHEET 1 OF 3
APPROVED	10	TITLE	SCALE
DE APPR.	11	AH-1 (209) SKIDTUBE ASSEMBLY	NTS
DATE	07.08.21	<small>COPYRIGHT © 2004 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

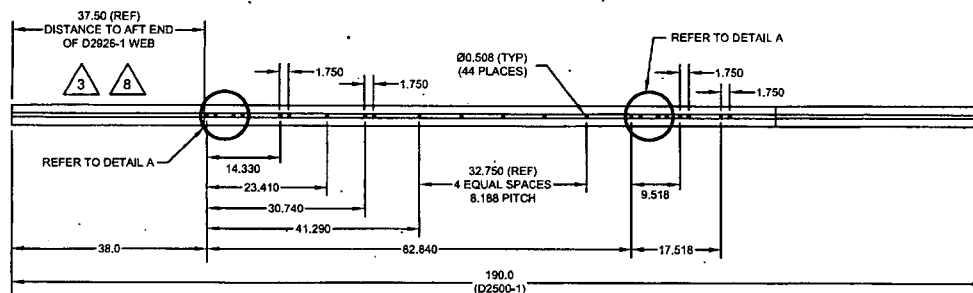
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

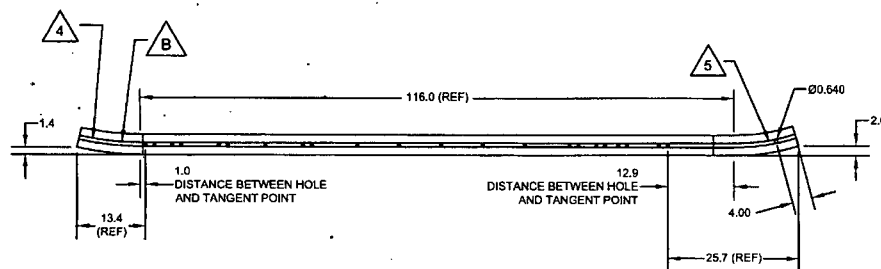
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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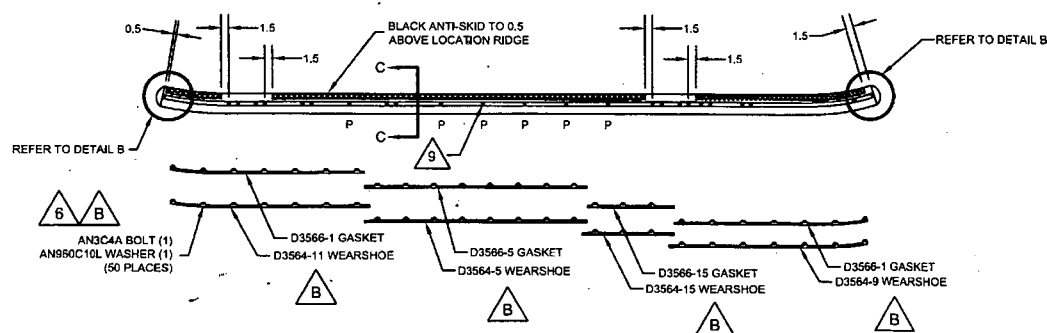




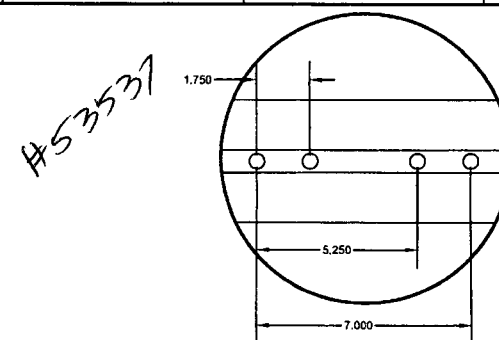
**D2906-1 DRILLING DETAIL**



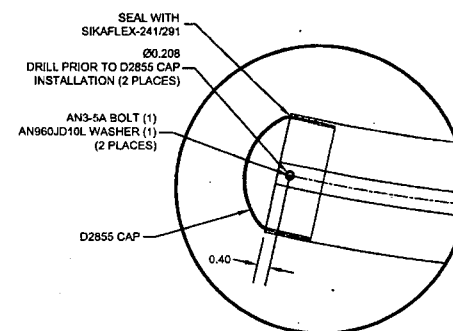
**D2906-041 BENDING AND CUTTING DETAIL**



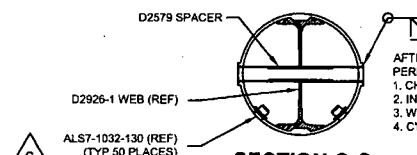
**D2906-041 ASSEMBLY DETAIL**



**DETAIL A  
SCALE 1:4**



**DETAIL B  
SCALE 1:4**



**SECTION C-C  
SCALE 1:4**

**RELEASED**  
07.09.04

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:  
1. CHAMFER HOLE 0.050 X 45°  
2. INSERT D2579 SPACER (22 PLACES)  
3. WELD INTO PLACE AND GRIND FLUSH  
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DESIGN	9	<b>DART AEROSPACE LTD</b>	
DRAWN	C.B.	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PH	DRAWING NO.	REV. B
MFG. APPR.	PH	D2906	SHEET 2 OF 3
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	AH-1 (209) SKIDTUBE ASSEMBLY	1:24
DATE	07.08.21	COPYRIGHT © 2004 BY DART AEROSPACE LTD	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

NO. 218

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 53542  
Part number: A209-669-043  
Description: SKID tube  
Welding Process: Tig[ ☒ ] Mig[ ☐ ]  
Base material: Alum  
Current: AC[ ☒ ] DC[ ☐ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[ ☒ ] fail[ ☐ ]  
Penetration: pass[ ☒ ] fail[ ☐ ]

UNACCEPTABLE

Cracks: pass[ ☒ ] fail[ ☐ ]  
Undercut: pass[ ☒ ] fail[ ☐ ]  
Pin holes: pass[ ☒ ] fail[ ☐ ]  
Overlap (cold lap): pass[ ☒ ] fail[ ☐ ]  
Porosity (surface): pass[ ☒ ] fail[ ☐ ]  
Coloration: pass[ ☒ ] fail[ ☐ ]

Qualifier David Hurd Date of Test Coupon 09/11/20  
Welder Barclay Elliott Date of Test Coupon 09/11/20

The above named individual is qualified in accordance with AWS D17.1.2001 to weld